IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
                                   : Examiner: N.Y.A.
CLAUDE LE DANTEC   )
                                   : Group Art Unit: N.Y.A.
Application No.: N.Y.A.   )
                                   :
Filed: Herewith   )
                                   :
For: ENCODING AND DECODING   )
      METHODS AND DEVICES   :
      AND SYSTEMS USING   )
      THEM   : April 4, 2001

Commissioner for Patents
Washington, D.C.   20231

PRELIMINARY AMENDMENT

Sir:

        Prior to examination on the merits, please amend

the above-identified application as follows:

IN THE SPECIFICATION:

        At page 1, line 1, insert the following title:

--ENCODING AND DECODING METHODS AND DEVICES AND SYSTEMS USING

THEM--.

Please amend Claims 5-7, 12-15, 17, 19-26, and 29-34 to read as follows. A marked-up version of those claims, showing the changes made thereto, is attached.

5. (Amended) Encoding method according to any one of Claims 1-3, characterised in that the sizes of all the sub-sequences are identical.

6. (Amended) Encoding method according to any one of Claims 1-3, characterised in that said first and second circular convolutional encoding methods are identical.

7. (Amended) Encoding method according to any one of Claims 1-3, characterised in that it further includes steps according to which:

- an additional interleaving operation is performed, consisting of interleaving the parity sequence (v_1) resulting from the first operation of dividing into sub-sequences and encoding (508); and

- a third operation is performed of division into sub-sequences and encoding, consisting of dividing the interleaved sequence, obtained at the end of the additional

interleaving operation, into p_3 third sub-sequences (U''_i), p_3 being a positive integer, and encoding each of said third sub-sequences (U''_i) by means of a third circular convolutional encoding method.

12. (Amended) Encoding device according to any one of Claims 8 to 10, characterised in that the sizes of all the sub-sequences are identical.

13. (Amended) Encoding device according to any one of Claims 8 to 10, characterised in that said first and second circular convolutional encoding means are identical.

14. (Amended) Encoding device according to any one of Claims 8 to 10, characterised in that it further has:

- additional interleaving means, for interleaving the parity sequence (v_i) supplied by the first means of dividing into sub-sequences and encoding (205, 202); and

- third means of dividing into sub-sequences and encoding, for dividing the interleaved sequence, supplied by said additional interleaving means, into p_3 third sub-sequences (U''_i), p_3 being a positive integer, and for

encoding each of said third sub-sequences (U''_i) by means of third circular convolutional encoding means.

15.   (Amended) Method for decoding a sequence of received symbols, characterised in that it is adapted to decode a sequence encoded by an encoding method according to any one of Claims 1 to 3.

17.   (Amended) Device for decoding a sequence of received symbols, characterised in that it is adapted to decode a sequence encoded by means of an encoding device according to any one of Claims 8 to 10.

19.   (Amended) Digital signal processing apparatus, characterised in that it has means adapted to implement an encoding method according to any one of Claims 1 to 3.

20.   (Amended) Digital signal processing apparatus, characterised in that it has an encoding device according to any one of Claims 8 to 10.

21. (Amended) Telecommunications network, characterised in that it has means adapted to implement an encoding method according to any one of Claims 1 to 3.

22. (Amended) Telecommunications network, characterised in that it has an encoding device according to any one of Claims 8 to 10.

23. (Amended) Mobile station in a telecommunications network, characterised in that it has means adapted to implement an encoding method according to any one of Claims 1 to 3.

24. (Amended) Mobile station in a telecommunications network, characterised in that it has an encoding device according to any one of Claims 8 to 10.

25. (Amended) Device for processing signals representing speech, characterised in that it includes an encoding device according to any one of Claims 8 to 10.

26. (Amended) Data transmission device having a transmitter adapted to implement a packet transmission

protocol, characterised in that it includes an encoding
device according to any one of Claims 8 to 10.

29. (Amended) Information storage means, which can
be read by a computer or microprocessor storing instructions
of a computer program, characterised in that it implements an
encoding method according to any one of Claims 1 to 3.

30. (Amended) Information storage means, which can
be read by a computer or microprocessor storing instructions
of a computer program, characterised in that it implements a
decoding method according to Claim 15.

31. (Amended) Information storage means, which is
removable, partially or totally, which can be read by a
computer or microprocessor storing instructions of a computer
program, characterised in that it implements an encoding
method according to any one of Claims 1 to 3.

32. (Amended) Information storage means, which is
removable, partially or totally, which can be read by a
computer or microprocessor storing instructions of a computer

program, characterised in that it implements a decoding method according to Claim 15.

33. (Amended) Computer program containing sequences of instructions, characterised in that it implements an encoding method according to any one of Claims 1 to 3.

34. (Amended) Computer program containing sequences of instructions, characterised in that it implements a decoding method according to Claim 15.
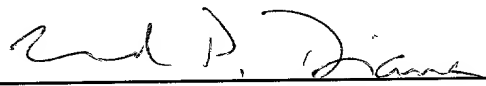
<u>REMARKS</u>

Claims 1-34 are pending in this application. Various ones of those claims have been amended to remove improper multiple dependencies therefrom.

Favorable consideration and early passage to issue of the present application are respectfully requested.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

_____
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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

5.   (Amended) Encoding method according to any one of [the preceding claims] Claims 1-3, characterised in that the sizes of all the sub-sequences are identical.

6.   (Amended) Encoding method according to any one of [the preceding claims] Claims 1-3, characterised in that said first and second circular convolutional encoding methods are identical.

7.   (Amended) Encoding method according to any one of [the preceding claims] Claims 1-3, characterised in that it further includes steps according to which:

    - an additional interleaving operation is performed, consisting of interleaving the parity sequence ($\underline{v}_1$) resulting from the first operation of dividing into sub-sequences and encoding (508); and

    - a third operation is performed of division into sub-sequences and encoding, consisting of dividing the

interleaved sequence, obtained at the end of the additional interleaving operation, into p_3 third sub-sequences ($\underline{U}''_i$), p_3 being a positive integer, and encoding each of said third sub-sequences ($\underline{U}''_i$) by means of a third circular convolutional encoding method.

12. (Amended) Encoding device according to any one of Claims 8 to [11] <u>10</u>, characterised in that the sizes of all the sub-sequences are identical.

13. (Amended) Encoding device according to any one of Claims 8 to [12] <u>10</u>, characterised in that said first and second circular convolutional encoding means are identical.

14. (Amended) Encoding device according to any one of Claims 8 to [13] <u>10</u>, characterised in that it further has:

- additional interleaving means, for interleaving the parity sequence ($\underline{v}_1$) supplied by the first means of dividing into sub-sequences and encoding (205, 202); and

- third means of dividing into sub-sequences and encoding, for dividing the interleaved sequence, supplied by said

additional interleaving means, into p_3 third sub-sequences ($\underline{U}''_i$),

p_3 being a positive integer, and for encoding each of said third

sub-sequences ($\underline{U}''_i$) by means of third circular convolutional

encoding means.

15.   (Amended) Method for decoding a sequence of

received symbols, characterised in that it is adapted to decode a

sequence encoded by an encoding method according to any one of

Claims 1 to [7] $\underline{3}$.

17.   (Amended) Device for decoding a sequence of

received symbols, characterised in that it is adapted to decode a

sequence encoded by means of an encoding device according to any

one of Claims 8 to [14] $\underline{10}$.

19.   (Amended) Digital signal processing apparatus,

characterised in that it has means adapted to implement an

encoding method according to any one of Claims 1 to [7 and/or a

decoding method according to Claim 15 or 16] $\underline{3}$.

20.   (Amended) Digital signal processing apparatus,

characterised in that it has an encoding device according to any one of Claims 8 to [14 and/or a decoding device according to Claim 17 or 18] 10.

21. (Amended) Telecommunications network, characterised in that it has means adapted to implement an encoding method according to any one of Claims 1 to [7 and/or a decoding method according to Claim 15 or 16] 3.

22. (Amended) Telecommunications network, characterised in that it has an encoding device according to any one of Claims 8 to [14 and/or a decoding device according to Claim 17 or 18] 10.

23. (Amended) Mobile station in a telecommunications network, characterised in that it has means adapted to implement an encoding method according to any one of Claims 1 to [7 and/or a decoding method according to Claim 15 or 16] 3.

24. (Amended) Mobile station in a telecommunications network, characterised in that it has an encoding device

according to any one of Claims 8 to [14 and/or a decoding device according to Claim 17 or 18] 10.

25. (Amended) Device for processing signals representing speech, characterised in that it includes an encoding device according to any one of Claims 8 to [14 and/or a decoding device according to Claim 17 or 18] 10.

26. (Amended) Data transmission device having a transmitter adapted to implement a packet transmission protocol, characterised in that it includes an encoding device according to any one of Claims 8 to [14 and/or a decoding device according to Claim 17 or 18 and/or a device for processing signals representing speech according to Claim 25] 10.

29. (Amended) Information storage means, which can be read by a computer or microprocessor storing instructions of a computer program, characterised in that it implements an encoding method according to any one of Claims 1 to [7] 3.

30. (Amended) Information storage means, which can be

read by a computer or microprocessor storing instructions of a

computer program, characterised in that it implements a decoding

method according to Claim 15 [or 16].

31. (Amended) Information storage means, which is

removable, partially or totally, which can be read by a computer

or microprocessor storing instructions of a computer program,

characterised in that it implements an encoding method according

to any one of Claims 1 to [7] 3.

32. (Amended) Information storage means, which is

removable, partially or totally, which can be read by a computer

or microprocessor storing instructions of a computer program,

characterised in that it implements a decoding method according

to Claim 15 [or 16].

33. (Amended) Computer program containing sequences of

instructions, characterised in that it implements an encoding

method according to any one of Claims 1 to [7] 3.

34. (Amended) Computer program containing sequences of

instructions, characterised in that it implements a decoding

method according to Claim 15 [or 16].